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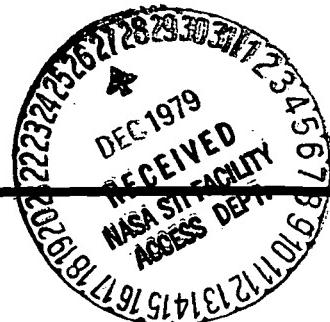
# NASA News

National Aeronautics and  
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## FIRST FLIGHT SET FOR PIVOT-WING RESEARCH AIRCRAFT

First flight of the manned NASA Oblique Wing Research Aircraft is planned for Wednesday, Dec. 19, at NASA's Dryden Flight Research Center, Edwards, Calif. Called the AD-1 for NASA Ames-Dryden, the research aircraft employs a pivoting-wing concept which could reduce noise and lower fuel consumption of future high-speed, transport-type aircraft.

Analytical and wind tunnel studies conducted by NASA's Ames Research Center, Mountain View, Calif., indicate that future oblique wing transport aircraft flying at 1,600 kilometers (1,000 miles) per hour might achieve twice the fuel economy of more conventional swept-wing transport aircraft.

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At lower flight speeds, the wing would be oriented at right angles to the fuselage, providing efficient, quiet operation for takeoff and landing as well as for low-speed cruise flight. The concept offers good low-speed stability and control characteristics and does not require complex high-lift systems. The engine thrust required for take off would be substantially reduced and could result in quieter operations in the terminal area.

For high-speed flights, the wing would be pivoted fore and aft to form oblique angles up to 60 degrees with the aircraft's fuselage. Studies indicate that this "scissor-wing" concept would permit better high-speed flight performance.

As the aircraft flies faster, pivoting the wing to an oblique angle would decrease air drag, permitting increased speed and longer range for the same fuel expenditure.

Because the concept is a significant departure from conventional aircraft design, NASA has initiated a low-cost exploratory program to study the fundamental low-speed operations of such an aircraft using this small, lightweight, manned test aircraft.

Tom McMurtry, pilot, will be at the controls for the first flight.

The research aircraft is approximately 12.2 meters (40 feet) long, with a wingspan of 9.7 m (32 ft.). Powered by two small 99.8 kilogram (220 pound) thrust turbojet engines, the AD-1 has a gross weight of approximately 907 kg (2,000 lb.) and will be capable of speeds in the 241-354 km/hr (150-220 mph) range.

For the first flight, the wing will remain perpendicular to the aircraft fuselage. On later flights, the wing can be pivoted from zero to 60 degrees while in flight.

The aircraft was built by the Ames Industrial Co., Bohemia, N.Y., under a \$240,000 fixed-price contract with NASA Dryden.

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